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ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
19311C MLRS, MISSILE NUMBER V18-003, ROUND NUMBER V132/DF5, 17 --ETC(U)
DEC 80

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LEVEL II

METEOROLOGICAL DATA REPORT

19311C MLRS

Missile No. V18-105

Round No. V132/015

15 Dec 1981

Number

12/15

White Sands Meteorological Team

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ATMOSPHERIC SCIENCE LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR 1166	2. GOVT ACCESSION NO. AD-A094832	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 19311C - MLRS Missile Number V18-003 Round Number V132/DF5		5. TYPE OF REPORT & PERIOD COVERED
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) White Sands Meteorological Team		8. CONTRACT OR GRANT NUMBER(s) DA Task 1F665702D127-02
9. PERFORMING ORGANIZATION NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Electronics Research & Development Cmd Atmospheric Sciences Laboratory White Sands Missile Range, New Mexico 88002		12. REPORT DATE December 1980
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) US Army Electronics Research & Development Cmd Adelphi, MD 20783		13. NUMBER OF PAGES 14
		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report)		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) Approved for public release; distribution unlimited.		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19311C MLRS, Missile No. V18-003, Round No. V132/DF5 presented in tabular form.		

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INTRODUCTION

19311C MLRS, Missile Number V18-003, Round Number V132/DF5,
was launched from LC 33, White Sands Missile Range (WSMR), New
Mexico, at 1530 MST on 17 December 1980. The scheduled launch time
was 1530 MST.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC 33 met site at T-0 minutes.

(2) Monitor of wind speed and direction from one anemometer was provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RALPH 1-4 pilot observation at:

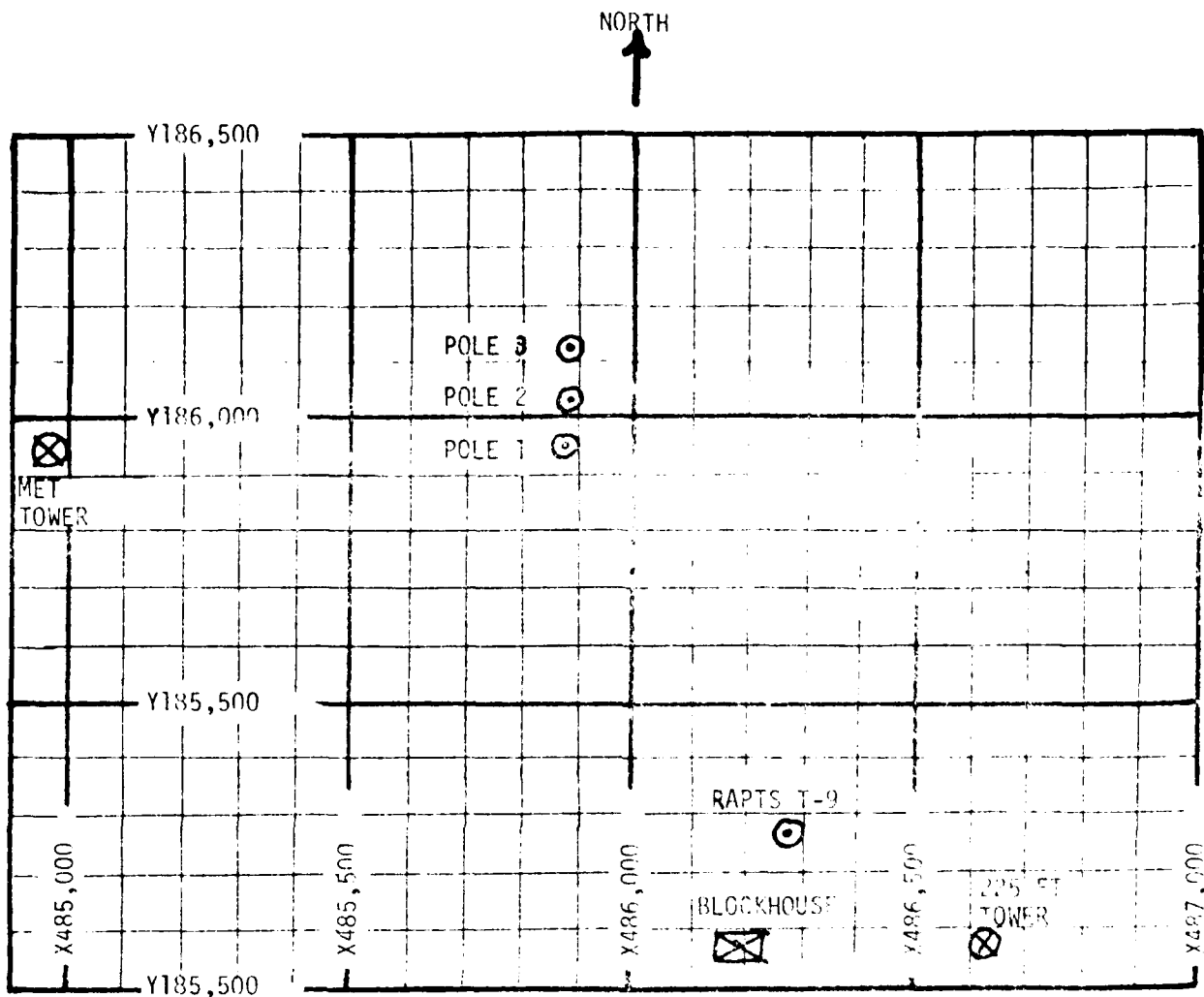
SITE AND ALTITUDE

LC 33	2km
NICK	2km

(b) Air structure data (rawinsonde) were collected at the following met sites. Data were collected from surface to as high as possible in 500-foot increments.

SITE AND TIME

WSD 1530 MST



1. MET TOWER - 4 Bendix Model T-120 Anemometers at 12 ft, 60 ft, 100 ft and 202 ft with E/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders.
 - (a) Pole #1 - 38.7 ft
 - (b) Pole #2 - 53.0 ft
 - (c) Pole #3 - 83.6 ft
3. 225 FT WIND TOWER - 5 Bendix Model T-120 Anemometers at 35 ft, 80 ft, 123 ft, 168 ft and 200 ft with 5 X-Y visual indicators in Blockhouse.
4. RAPTIS T-9 - Radar Automatic Pilot-Balloon Tracking System T-9 Radar

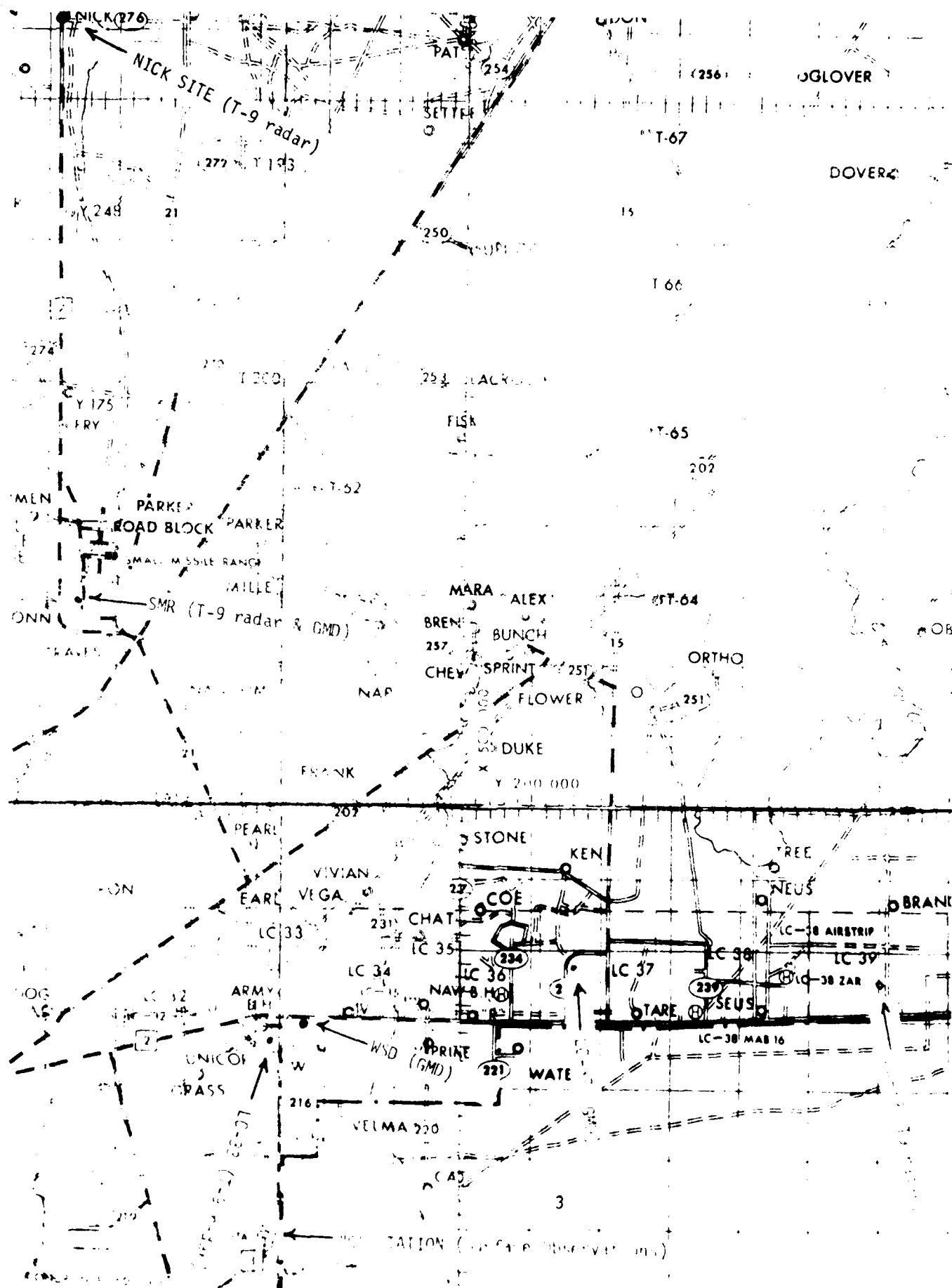


TABLE 1. Surface Observations taken at 1530 MST,
17 December 1980, at LC-33, 19311C MLRS,
Missile No. V18-003, Round No. V132/DF5

ELEVATION	3983	FT/MSL
PRESSURE	881.8	MBS
TEMPERATURE	18.0	°C
RELATIVE HUMIDITY	30	%
DEW POINT	0.1	°C
DENSITY	1050	GM/M ³
WIND SPEED	03	KTS
WIND DIRECTION	120	DEGREES
CLOUD COVER	CLEAR	

TABLE 2

LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.00 H4063.98 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	150	01	T-30		CALM	T-30	150	02
T-20	150	01	T-20		CALM	T-20	150	02
T-10	150	01	T-10		CALM	T-10	159	02
0-0	150	01	0-0	163	01	0-0	159	03
+10	150	01	+10	156	01	+10	159	03

TABLE 3

LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 52 FEET X484,982.64, Y185,057.73, H4033.57		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	126	02	T-30	126	03
T-20	134	03	T-20	125	03
T-10	135	03	T-10	122	04
0-0	120	03	0-0	123	03
+10	114	03	+10	128	04

LEVEL #3, 100 FEET X484,982.64, Y185,057.73, H4033.57 (base)			LEVEL #4, 150 FEET X484,982.64, Y185,057.73, H4033.57 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	115	03	T-30	117	03
T-20	115	03	T-20	114	02
T-10	117	03	T-10	114	02
0-0	118	04	0-0	114	02
+10	119	03	+10	106	01

PILOT BALLOON MEASURED WIND DATA

TABLE 4

RELEASED FROM LC 33

DATE 17 December 1980

TIME 1530 MST

COORDINATES (WSTM) X = 486,037.24 Y = 182,350.16 U = 3977.30

NOTE: WIND DIRECTIONS ARE REFERENCED TO

HEIGHTS ARE METERS AGL XX OR FEET AGL _____.

[illegible][illegible][illegible]

PILOT BALLOON MEASURED WIND DATA

TABLE 5

RELEASED FROM NICK

DATE 17 December 1980

1530 MST

COORDINATES (WSTM) X= 470, 734.56 Y 255,775.64 4126.57

NOTE: WIND DIRECTIONS ARE REFERENCED TO

HEIGHTS ARE METERS AGL **xx** OR FEET AGL .

[illegible][illegible][illegible]

STATION ALTITUDE 3989.00 FEET MSL
 17 DEC. 68 1550 HRS. 05Z
 ASCECT 107120. 000

SIGHTING LEVEL DATA
 2520020600
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 6

PRESSURE	GEOMETRIC ALTITUDE	AIR TEMPERATURE DEGREE F	REL. HUM. PERCENT
MILLIBARS	FEET		
391.0	3989.0	19.6	5.7
367.6	4021.8	19.3	6.2
350.0	4098.4	17.6	1.6
318.6	6054.2	16.2	7.6
247.6	6767.0	13.1	2.0
240.6	8084.0	14.4	7.6
221.4	9582.4	12.0	2.0
200.0	10568.1	10.7	10.7
193.0	10619.5	11.0	11.7
157.4	12080.3	8.5	14.4
150.8	13197.2	6.1	16.4
103.6	19320.6	1.1	17.7
74.0	17341.2	16.2	22.5
530.6	17452.3	6.0	24.7
303.0	19244.8	10.0	29.1
100.0	20759.0	23.4	36.2
57.0	24827.2	26.5	40.5
339.4	26731.2	25.4	46.0
324.5	27701.8	25.0	46.0
303.0	27756.5	27.4	50.2
300.0	31775.3	29.3	50.4
			55.0

STATION ALTITUDE 3900.00 FEET ASL
 17 DEC 62 09 1530 HRS CST
 ASCENSION NO. 000

WIND & AIR DATA
 3900000000
 WIND CODE 0000

COORDINATE CODE 14145
 32.400000 LAT DEG
 106.370000 LONG DEG

TABLE 7

GEODETIC ALTITUDE FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CELSIUS	RELATIVE HUMIDITY PERCENT	WIND SPEED MILES PER HOUR	WIND DIRECTION DEGREES TRUE	WIND DATA SPEED KNOTS	REFRACTION
3989.0	881.0	19.6	3.7	1094.6	607.7	1.9	1.000268
4000.0	880.7	19.6	3.7	1094.4	607.7	1.9	1.000268
4500.0	862.2	19.1	3.1	1020.2	607.0	1.9	1.000261
5000.0	850.0	17.6	1.6	1015.3	605.5	1.0	1.000257
5500.0	834.0	10.0	.5	1003.0	603.4	2.2	1.000252
6000.0	820.0	14.4	-1.5	979.8	601.5	3.4	1.000248
6500.0	802.5	13.5	-1.5	876.2	600.4	5.0	1.000243
7000.0	790.0	13.5	-2.6	959.6	600.1	9.3	1.000237
7500.0	775.7	13.7	-4.0	961.4	600.5	13.1	1.000231
8000.0	762.6	14.0	-5.7	923.5	600.3	14.7	1.000224
8500.0	742.2	14.4	-7.6	906.2	601.2	16.0	1.000218
9000.0	730.7	13.2	-8.6	893.5	609.8	16.3	1.000214
9500.0	722.5	12.1	-9.5	881.0	608.5	15.8	1.000210
10000.0	704.5	11.3	-10.2	867.6	607.5	13.5	1.000206
10500.0	690.6	10.2	-11.2	853.5	607.0	12.0	1.000202
11000.0	684.0	10.3	-12.4	839.4	606.4	11.8	1.000198
11500.0	671.6	9.5	-13.3	826.7	605.4	12.0	1.000195
12000.0	659.6	8.0	-14.3	814.2	604.5	12.8	1.000191
12500.0	647.5	7.6	-15.2	802.5	603.1	12.6	1.000188
13000.0	635.6	6.5	-16.0	790.7	601.8	12.3	1.000185
13500.0	623.7	4.8	-16.7	781.0	609.8	12.7	1.000182
14000.0	612.1	2.6	-17.2	772.7	607.2	13.4	1.000180
14500.0	600.6	.7	-18.2	763.3	605.0	13.6	1.000177
15000.0	589.5	-2.4	-19.6	752.0	603.7	13.6	1.000174
15500.0	578.1	-1.5	-21.0	740.8	602.5	14.3	1.000171
16000.0	567.0	-2.6	-22.5	729.6	601.0	14.3	1.000168
16500.0	556.0	-3.7	-23.9	718.9	609.7	13.7	1.000165
17000.0	545.9	-4.3	-25.4	708.5	608.5	13.5	1.000162
17500.0	535.4	-6.2	-26.9	698.2	607.7	13.7	1.000160
18000.0	525.0	-7.4	-28.1	687.9	605.2	14.1	1.000157
18500.0	514.0	-8.7	-29.3	677.9	603.7	14.6	1.000156
19000.0	503.0	-10.0	-30.5	668.0	602.1	15.3	1.000152
19500.0	492.0	-11.2	-31.5	657.0	600.7	15.3	1.000150
20000.0	481.0	-12.5	-32.6	647.4	609.3	15.4	1.000147
20500.0	470.2	-13.4	-33.1	637.1	608.0	15.8	1.000144
21000.0	459.7	-14.5	-34.0	627.1	606.6	16.3	1.000142
21500.0	449.0	-15.6	-34.8	617.6	605.5	16.8	1.000140
22000.0	438.2	-16.7	-35.6	607.5	604.3	17.4	1.000137
22500.0	427.5	-17.4	-36.0	597.9	602.5	17.7	1.000135
23000.0	417.0	-19.0	-36.3	588.1	601.2	18.0	1.000133

STATION ALTITUDE 3989.00 FEET MSL
 17 DEC 60 1530 HRS PST
 ASCENSION NO. 000

UPPER AIR DATA
 3520020000
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LONG DEG

TABLE 7 (cont)

GEOMETRIC ALTITUDE FSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUMID. PERCENT	DENSITY G/CM ³	SPEED OF SOUND, M/SEC	WIND DATA DIRECTION, DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	420.4	-20.1	22.5	579.3	619.0	261.1	18.5	1.000131
24000.0	412.5	-21.2	22.6	570.2	618.4	260.0	19.0	1.000129
24500.0	404.2	-22.3	22.9	561.3	617.1	261.0	19.8	1.000126
25000.0	396.0	-23.4	23.0	552.2	615.7	263.1	20.7	1.000124
25500.0	387.8	-24.4	23.0	543.1	614.5	261.9	21.1	1.000122
26000.0	379.8	-25.4	23.0	534.1	613.2	259.5	21.4	1.000120
26500.0	371.9	-26.7	23.2	525.7	611.0	257.1	21.7	1.000118
27000.0	364.1	-28.1	23.4	517.4	609.9	251.2	22.2	1.000116
27500.0	356.4	-29.4	23.6	509.2	608.5	245.5	23.1	1.000114
28000.0	349.0	-30.7	23.8	501.3	607.7	241.1	23.9	1.000112
28500.0	341.6	-32.0	23.9	493.4	605.0	239.2	24.3	1.000111
29000.0	334.3	-33.3	24.0	485.4	603.4	237.4	24.4	1.000109
29500.0	327.1	-34.5	24.0	477.5	601.9			1.000107
30000.0	320.1	-35.6	24.0	469.4	600.4			1.000105
30500.0	313.2	-36.7	24.0	461.3	599.1			1.000103
31000.0	306.4	-37.9	24.5	453.6	597.6			1.000101

** AT LAST OF 25000.0 FEET TEMPERATURE VALUE WAS 24.4 DEGREES.

STATION ALTITUDE 593.00 FEET LVL
 17 OF 172
 ASSUMED NO. 002

LABORATORY LEVELS
 35200.20000
 WHITE 50000

GEODETIC COORDINATES
 32.90045 LAT DEG
 106.37033 LONG DEG

TABLE 8

PRESSURE (PSI)	TEMPERATURE (°F)	TEMPERATURE (°C)	WIND DIRECTION (DEGREES)	WIND SPEED (KNOTS)	WIND DATA
850.0	99.5	17.0	1.0	34.	235.0
800.0	66.7	13.2	-1.6	35.	260.4
750.0	40.2	10.0	-7.0	21.	270.0
700.0	16.3	10.7	-10.7	21.	281.0
650.0	12.7	7.0	-15.0	18.	277.0
600.0	10.1	7.7	-18.2	23.	270.0
550.0	10.1	-4.4	-24.0	16.	277.4
500.0	10.1	-10.6	-20.1	20.	271.3
450.0	21.0	-16.6	-33.3	21.	263.7
400.0	24.7	-22.0	-38.2	23.	262.5
350.0	27.0	-30.5	-44.0	24.	261.5
300.0	31.3	-39.3			23.8

** AT LEAST ONE ASSUMED REL TIME OR RELTY VALUE WAS USED IN THE INTERPOLATION.

DATE
FILMED
-8-